GPC40 SERIES - INSTALLATION INSTRUCTIONS

RATINGS

Input: 100-240 VAC, 1.3 A, 47-63 Hz

Outputs:

Model	Watts[1]	Output #1	Isc[2]	Output #2	Isc[2]	Output #3	Isc[2]
GPC40A	40	+5.1VDC 4A	1A	+12VDC 2A	0.5A	-12VDC 0.4A	2A
GPC40B	40	+5.1VDC 4A	1A	+15VDC 2A	0.5A	-15VDC 0.4A	2A
GPC40D	40	+5.1VDC 4A	1A	+24VDC 1A	0.5A	-12VDC 0.4A	2A
GPC40-3.3	26.4	3.3VDC 8A	1A				
GPC40-5	40	5.0VDC 8A	1A				
GPC40-12	40	12.0VDC 3.4A	1A				
GPC40-15	40	15.0VDC 2.7A	1A				
GPC40-24	40	24.0VDC 1.7A	1A				
GPC40-28	40	28.0VDC 1.5A	1A				

Notes:

1. Maximum continuous output power at 50°C - Total of all Outputs.
2. Isc = Maximum output short circuit current.
3. Maximum Relative Humidity 96%, no condensation.

SAFETY

All models are Certified to be in compliance with the applicable requirements of UL 1950, CSA 22.2 No. 234 (Level 3), IEC 950, EN60950 and VDE 0805 for Pollution Degree 2 environment and Class I TN-S power systems) The output of these supplies meet the requirements for SELV and are not an energy hazard.

GROUNDING: Protection Class I requires that the ground terminal be bonded to Protective Earth in the end application. Using this terminal for the primary system earthing terminal is not recommended.

Creepage and clearance distances from primary circuits to ground and secondary circuits, as defined in the applicable safety standards, must be maintained after installation to preserve the intended safety. The maximum operating temperatures of certain safety components, as defined in the applicable safety standards, must not be exceeded after installation to preserve the intended safety. The output power, ambient air temperature and the availability, amount, direction and/or restriction of airflow influence the temperatures of these components.

WARNING! RISK OF FIRE!

A blown fuse is an indication of catastrophic failure of circuit component(s). Repair must be performed by Condor authorized personnel. Fuse F1 must be replaced with 2A 250V (fast blow), UL Listed and CSA Certified type.

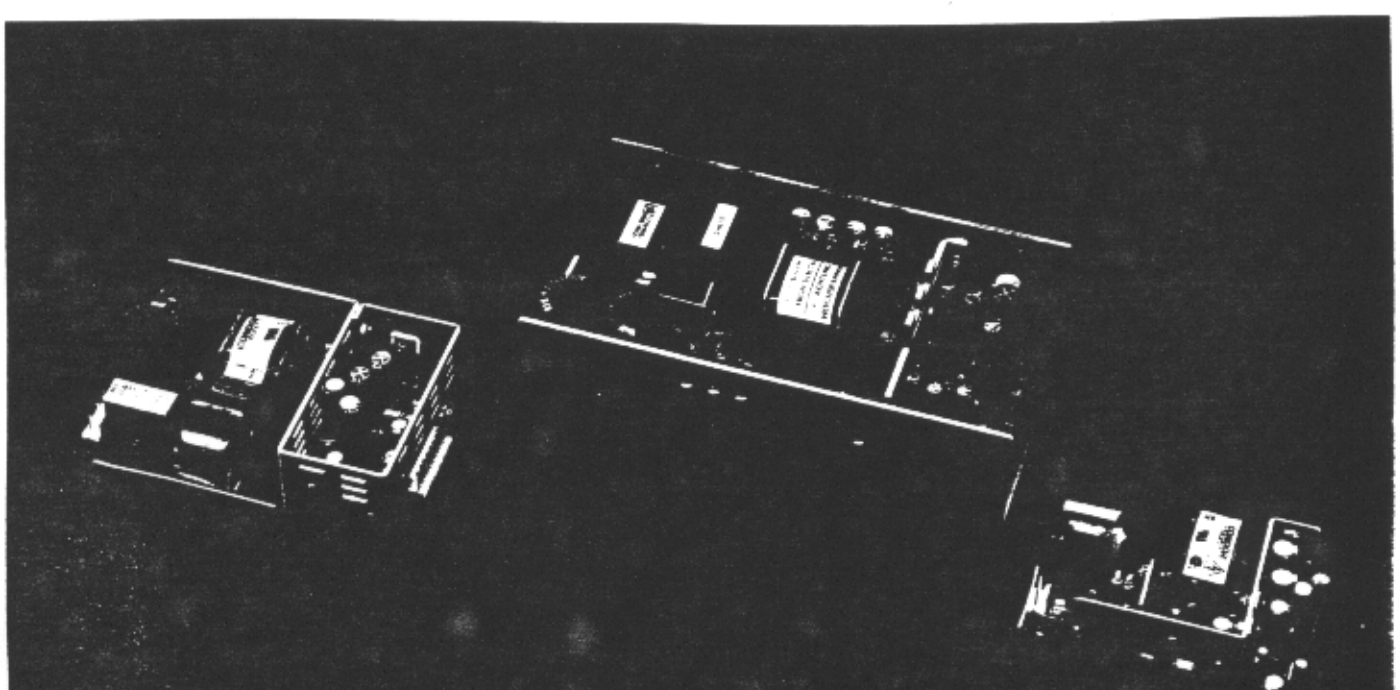
CONNECTIONS

J1 AC Input	Multi-Output Models J2 DC Outputs	Single Output Models Only J2 DC Output	J3
1) Line	1) Output 2 (+)	1) Output 1 (+)	1) + Sense
3) Neutral	2) Output 1 (+)	2) Output 1 (+)	2) Com Sense
	3) Output 1 (+)	3) Output 1 (+)	
	4) Common	4) Common	
	5) Common	5) Common	
	6) Output 3 (-)	6) Common	

MATING CONNECTORS	
J1	Molex Housing 09-50-8031 Contact 08-50-0189
J2	Molex Housing 09-50-3061 Contact 08-50-0189

Condor DC Power Supplies Inc. will not be liable for the safety, reliability or performance of these power supplies if a) any changes, modifications or repairs are carried out by other than authorized agents of Condor DC Power Supplies Inc., or b) the installation of the supply is not in accordance with these installation instructions and the applicable UL, CSA, IEC and/or VDE safety standards.

GLOBAL PERFORMANCE SWITCHERS



AC Input: 85-264Vac, 47-63Hz single phase.

Input Current: Maximum input current at 120Vac. 60Hz with full rated output load:

GPx40	1.3A	GPx130	3.5A
GPx50	1.5A	GPx140	3.7A
GPx55	1.7A	GPx200	5.5A
GPx80	2.3A	GPx225	5.5A

DC Outputs: See output ratings chart of individual models.

Hold-Up Time: 20mSec minimum from loss of AC input at full load. nominal line (115Vac).

Output Power: Normal continuous output power is as listed below. Each individual output is to be used within the specified limits of that output (see output ratings chart for specific model). Peak ratings are for 60-sec. maximum duration, 10% duty cycle. During peak load condition, output regulation may exceed total regulation limits. Certain conditions exceeding individual output ratings may be obtained with degraded performance. Consult factory for application assistance.

	Continuous	Peak
GPx40	40W	50W
GPx50	50W	60W
GPx55	55W	70W
GPx80	80W	110W
GPx130	130W	165W
GPx140	140W	175W
GPx200	200W	220W
GPx225	225W	250W

Output: Regulation: See output rating chart for individual output regulation ratings.

Overload Protection: Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit on Outputs #1 & 2; foldback type on Outputs #3 & 4. Recovery after fault is automatic. See output ratings chart for additional notes or conditions.

Minimum Load: Normal operation — Output 1 and/or 2 combined load current must exceed 20% of total power. In addition, Output #1 must meet the minimums listed below for proper regulation of other outputs. See output ratings chart for additional notes or conditions.

GPx40	0.4A
GPx50	0.4A
GPx55	0.7A
GPx80	1.0A
GPx130	3.0A
GPx200	4.0A
All singles	Not required

Efficiency: 65% at full rated load, nominal input voltage, depending on model and load distribution. Single-output models: 72-85%, depending on model.

Overshoot: Less than 3% overshoot at turn-on under nominal conditions, inversely proportional to input voltage and temperature. Less than 2% overshoot at turn-off under all conditions.

Turn-on Time: Less than 1 second at 110Vac, 25 °C (inversely proportional to input voltage and thermistor temperature).

Input Protection: Internal AC fuse provided on all units. Designed to blow only if a catastrophic failure occurs in the unit — fuse does not blow on overload or short circuit. AC input protected against limited energy line transients by 320Vac metal oxide varistor on all units. ESD protection to 15kV per IEC 801-2, IEC 801-4 level 2 and

IEC 801-5 level 1.

Inrush Current: Inrush is limited by internal thermistors. The inrush at 240Vac, averaged over the first AC half-cycle under cold start conditions will not exceed:

GPx40	37A	GPx130	37A
GPx50	37A	GPx140	60A
GPx55	37A	GPx200	60A
GPx80	37A	GPx225	60A

Temperature Coefficient: 0.03%/°C typical on all outputs.

Operating Temperature Range: 0 to 50 °C at full rated output power for 40 through 80W units. GPx130, 200 and 225 require moving air. See operating temperature table for additional details on each model. For operation in a confined space, moving air may be required. Under all conditions, the cooling vs. load profile should be such that heat sinks and/or chassis temperatures do not exceed 90 °C for extended periods.

Storage: – 40 to + 85 °C. Units should be allowed to warm up under non-condensing conditions before application of power.

Altitude: – 500 to 10,000 ft.

Thermal Shutdown: Provided as a standard feature on GPx130, 140, 200 and 225 models. Designed to fold back when the chassis temperature exceeds 90 °C. Recovery is automatic when chassis cools to less than 90 °C.

Power Fail: TTL or CMOS compatible output goes low (< 0.5V) 5mSec before output voltage drops more than 4% below nominal voltage upon loss of AC power. The signal is factory set to trip on 84 to 94Vac brown-out depending upon incoming line impedance and distortion. Other settings are available to the user through adjustment of built-in potentiometer (consult factory for assistance). Output will stay low for 20mSec minimum. For applications requiring continuous low signal until Output #1 voltage declines below 2.4V, a latch or other device is recommended. Provided as a standard feature on all GPx130, 140, 200 and 225 models; can be provided as an option on the GPx80 model by adding PF suffix to P/N.

No Load Turn-on/Standby: No degradation of reliability will occur however regulation will be affected. (The GPx130 may cycle on and off without minimum load.)

Output Noise: 0.5% RMS, 1% Pk-Pk, 20MHz, bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.

Transient Response: Main output — 500 μSec typical response time for return to within 0.5% of final value for a 50% load step change. $\Delta i/\Delta t < 0.2A/\mu Sec$. Maximum voltage deviation is 3.5%.

Remote Sense: Provided as a standard feature on the + 5V output of GPx130 and 200 multiple-output models and GPx40, 80, 130, 140 and 225 single-output models. Capable of compensating for 0.25V total of cabling losses in the 5V output.

Overvoltage: Built in on + 5V output with firing point set @ 6.2V ± 0.6V. OVP firing reduces + 5V and Output #2 to less than 50% of nominal voltage in 50μSec. Single-output models include OVP with the following limits:

+ 5V	6.2V ± 0.6V
+ 12V	14V ± 1.0V
+ 15V	19V ± 1.5V
+ 24V	28V ± 2.8V
+ 28V	34V ± 2.8V

Voltage Adjustment: Built-in potentiometer adjusts voltage from 4.7V to OVP point (6.2V nominal) on the + 5V output, but should not be run above 5.3V steady state. Consult factory for application assistance. A separate potentiometer adjusts Output #2. ± 5% minimum on all models except the GPx40. Note: Output #1 must not be more than 1% below nominal to achieve full output voltage range on Output #2. Output regulation limits in some models may be exceeded when the main output is adjusted beyond + 1% of nominal voltage. See output ratings chart for additional notes and conditions. High voltage settings may degrade the reliability of the unit due to excessive power dissipation in some outputs.

Reverse Voltage Protection: All outputs protected against inadvertent application of reverse voltage up to 1 times rated current of the reverse output.

Overload Protection: Factory set to begin power limiting at:

GPx40	55W	GPx130	170W
GPx50	65W	GPx140	175W
GPx55	75W	GPx200	230W
GPx80	120W	GPx225	250W

Individual output current limits are a function of load distribution and degree of overload. Consult factory for specific condition limits. Current limit is cycling type for Outputs #1 & 2, foldback on Outputs #3 & 4. (All limits are nominal values at 115Vac input.)

EMI Compliance: All models include built-in EMI filtering to meet or exceed the conducted emissions requirements of FCC 20870 Class B and VDE 0871 Class B to 30MHz. Typical margins > 3dB at all frequencies and line/load conditions.

Leakage Current:

	Medical	Commercial
Model	Note 1	Note 2
GPx40-140	35μA	0.7mA
GP200-225	60μA	0.95mA

Note 1: For patient care equipment (UL544), 120Vac @ 60Hz input.

Note 2: All non-medical (UL1950), 254Vac @ 60Hz input (with no deviations).

Safety: All GPC models are approved to UL1950, CSA22.2 No. 234 Level 3, IEC950, EN60950 and VDE 0805. All medical models are approved to UL544, IEC601-1, CSA 234L3 and VDE 0750. All models have been submitted for approval to UL, CSA and IEC standards; consult factory for approval status. UL file #E135803 commercial, E116994 medical; CSA #LR46516 all models.

Vibration: All models are designed to meet MIL-STD 810E, Method 514.4 Category I. This test consists of random vibration at 0.015g/Hz from 5 to 50Hz declining linearly to 0.015g2/Hz at 500Hz in each axis for 1 Hr.

Shock: All models designed to meet MIL-STD 810E, Method 516.4. Unpackaged units shall meet the bench handling requirements of Procedure VI for 4 drops per face. Packaged units shall meet the requirements of Procedure IV for transit/shipping drops comprised of four drops on each face of the standard container from 30 inches onto a plywood base.

Packaging: Each unit individually wrapped in anti-static bag and packaged in a rugged cardboard shipping box.

Unless otherwise noted, all parameters are measured at 115Vac, @ 25 °C and represent the nominal values. For limits at unusual operating conditions, consult factory.

GP40 GLOBAL PERFORMANCE SWITCHERS

Model (Note A)	Output	Output Voltage	Output Current Minimum	Output Current Maximum	Output Current Peak	Noise P-P	Total Regulation (Note B)	Notes
GPx40A	1	+5.1V	0A	4A	5A	50mV	2%	
	2	+12V	0A	2A	3A	120mV	5%	C, D
	3	−12V	0A	0.4A	0.7A	120mV	3%	D
GPx40B	1	+5.1V	0A	4A	5A	50mV	2%	
	2	+15V	0A	2A	3A	150mV	5%	C, D
	3	−15V	0A	0.4A	0.7A	150mV	3%	D
GPx40D	1	+5.1V	0A	4A	5A	50mV	2%	
	2	+24V	0A	1A	1.5A	240mV	5%	C, D
	3	−12V	0A	0.4A	0.7A	120mV	3%	D
GPx40-3.3	1	3.3V	0A	8A	10A	35mV	2%	
GPx40-5	1	5V	0A	8A	10A	50mV	2%	
GPx40-9	1	9V	0A	4.5A	6A	90mV	2%	
GPx40-12	1	12V	0A	3.3A	4.2A	120mV	2%	
GPx40-15	1	15V	0A	2.7A	3.3A	150mV	2%	
GPx40-24	1	24V	0A	1.7A	2.1A	240mV	2%	
GPx40-28	1	28V	0A	1.4A	1.8A	280mV	2%	

NOTES:

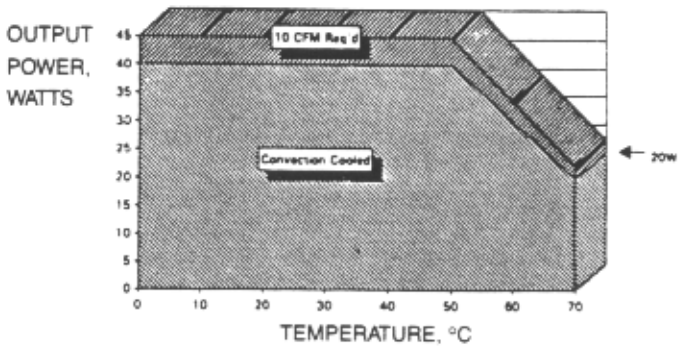
A. Replace "x" in Model No. as follows:
   M = Medical version
   C = Standard version for data processing, control, etc., applications.

B. Total regulation is defined as the maximum deviation from the nominal voltage for all steady-state conditions of initial voltage setting, input line voltage and output load.

C. To maintain these regulation conditions, the 5.1V current must be at least 1/4 of V2 and not greater than 5 times the V2 current.

D. Requires +5.1V to be adjusted within ±1% with at least a 0.4A load to maintain regulation on this output.

GP40 OPERATING TEMPERATURE LIMITS



GP40 MECHANICAL INFORMATION

J1 CONNECTOR: AMP P/N 640445-3
W/CENTER PIN REMOVED: 0.156 CTR HEADER

J2 CONNECTOR: AMP P/N 640445-6: 0.156 CTR HEADER

GND: 0.250 FASTON TAB

INPUT: J1

PIN 1) AC LINE
PIN 2) AC NEUTRAL

OUTPUT: J2 MULTI-OUTPUT MODELS

PIN 1)	OUTPUT #2	PIN 4)	COMMON
PIN 2)	OUTPUT #1	PIN 5)	COMMON
PIN 3)	OUTPUT #1	PIN 6)	OUTPUT #3

OUTPUT: J2 SINGLE-OUTPUT MODELS

PIN 1)	OUTPUT #1	PIN 4)	COMMON
PIN 2)	OUTPUT #1	PIN 5)	COMMON
PIN 3)	OUTPUT #1	PIN 6)	COMMON

J3 REMOTE SENSE: (SINGLE-OUTPUT MODELS ONLY)
AMP P/N 640456-2 0.100 CTR HEADER

NOTE: 5A MAXIMUM RECOMMENDED CURRENT PER CONNECTOR PIN

WEIGHT: 12 OZ. MAX.